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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,182	04/16/2004	Naiyong Jing	56211US008	9804
32692	7590	06/26/2007	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			MCNALLY, DANIEL	
PO BOX 33427			ART UNIT	PAPER NUMBER
ST. PAUL, MN 55133-3427			1733	
			NOTIFICATION DATE	DELIVERY MODE
			06/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/826,182	Applicant(s) JING ET AL.	
	Examiner Daniel McNally	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 29-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/9/2007, 4/30/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to the Amendment filed 4/30/2007.

Election/Restrictions

2. Applicant's election with traverse of Group I, Claims 1-3 and 5-28 in the reply filed on 4/30/2007 is acknowledged. The traversal is on the ground(s) that examining all claims would not impose a serious burden on the examiner. This is not found persuasive because the examination of the different embodiments would require different consideration for each of the two embodiments and each of the embodiments would require a different search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claims 1 and 17 are objected to because of the following informalities: Claim 1, lines 5-6 recites "to bond the and the substrate." Claim 17, lines 3-4 recites "treating a surface of partially fluorinated thermoplastic polymer the with a ..." Claims 1 and 17 have been amended and contain the above cited phrases that do not make grammatical sense. It is recommend the applicant amend Claim 1, line 5 by inserting –partially fluorinated thermoplastic polymer—between the words "the" and "and" where the word fluoropolymer has been removed. It is recommended moving the word "the" from after "partially fluorinated thermoplastic polymer" to before "partially fluorinated thermoplastic polymer". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3 and 5-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 2, 3, 9, 17, and 22 have been amended by changing fluoropolymer to "partially fluorinated thermoplastic polymer". The applicant cites page 5, line 32 through page 6, line 15 to support the amendment. The cited paragraph provides support for a "partially fluorinated polymer" that can be melt-processible. In the cited paragraph the applicant also discloses materials that can be injected, compression molded, or other methods associated with thermoplastics. This would include materials that are not thermoplastic but can be treated like thermoplastics, i.e. curable, thermoset materials. The applicant uses the term "thermoplastic" in the claims without defining the term "thermoplastic" in the specification. Applicant was not in possession of "thermoplastic" polymers but rather was in possession of "melt processible" polymers. For the purpose of examination it is assumed a thermoplastic is a material that can be melt-processible. The applicant is advised to amend the claims by replacing the word "thermoplastic" with --melt processible--.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 1-3 and 5-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if the applicant is claiming a method of bonding a "fluoropolymer" or a method for bonding a "partially fluorinated thermoplastic polymer" because both terms are used in the claims. Some of the "fluoropolymer" terms have been replaced with "partially fluorinated thermoplastic polymer" and in other places the term "fluoropolymer" is still used. For example among others:

Claim 1, line 1 cites a "fluoropolymer," line 3 was amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer," line 5 was amended to remove "fluoropolymer" but no term was substituted in its place.

Claim 2, line 2 recites the "fluoropolymer," line 3 was amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer."

Claim 3, line 3 was amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer."

Claim 9, line 2 was amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer."

Claim 17, lines 1 and 9 still recite "fluoropolymer," lines 3 and 6 were amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer."

Claim 22, line 2 was amended to replace "fluoropolymer" with "partially fluorinated thermoplastic polymer."

The applicant is advised to replace all recitations of the word "fluoropolymer" with the term --partially fluorinated melt processible polymer--. The use of the word "fluoropolymer" can lead one to believe the applicant is claiming a method for the broad group of any fluoropolymer, while the applicant is actually claiming a method for the specific group of "partially fluorinated thermoplastic polymer." For the purpose of examination it is assumed the applicant is not claiming the more specific "partially fluorinated melt processible polymer" rather than the generic "fluoropolymer."

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1,3,5,6,11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baum et al. [US3338345] (of record, previously cited) in view of Strassel et al. [US5112692] (newly cited).

Baum discloses a method of bonding a fluorocarbon resin to a glass substrate. The method comprises supplying a fluorocarbon resin and a silicate glass, treating the glass with an amino-functional silane coupling agent, applying the fluorocarbon to the treated glass and curing at an elevated temperature as recited in claim 1 (column 1, lines 44-53). Baum's method is generic to any fluorocarbon. While Baum provides two common types of fluorocarbon resins, such as TFE and FEP, Baum's method is not limited to using these materials (column 3, lines 20-38). Baum discloses generically fluorocarbon resins but is silent as to specifically partially fluorinated thermoplastic polymers.

Strassel discloses a method of bonding PVDF with glass, metal, wood and other materials (column 4, lines 8-42). Strassel discloses treating or modifying the PVDF to improve the compatibility of the PVDF with the glass. In the applicant's specification PVDF is disclosed as a melt processible material, and the PVDF is partially fluorinated.

It would have been obvious to one of ordinary skill in the art at the time of invention to select as Baum's fluorocarbon resin a "partially fluorinated thermoplastic polymer" such as PVDF as taught by Strassel in order coat the glass with a material having desired material properties.

The coupling agent is applied to the glass as recited in claim 3. Baum discloses an inorganic substrate, silicate glass, as recited in claims 5 and 6. Baum discloses a list of possible amino-functional silane coupling agents (column 2, lines 39-61). While applying heat to the article, Baum discloses using a weight to apply pressure to the article as recited in claim 16 (column 4, line 22-30).

10. Claims 1-3 and 5-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grootaert et al. [US588246] (of record, previously cited) in view of Fukushima [US5658671] (of record, previously cited) for the same reasons discussed in paragraph 6 of the Office action dated 12/28/2006.

Response to Arguments

11. It is noted in the arguments on page 12, that the applicant is arguing the rejections over Grootaert and Fukushima, however in fifth paragraph on page 12 the applicant recites the claims are patentable over Baum and accordingly the rejection under 35 U.S.C. 102 should be withdrawn. The examiner considered this a

typographical error during consideration of the arguments. The arguments on page 12 are considered to be relevant only to Grootaert and Fukushi and not to Baum.

Applicant's arguments with respect to claims 1,3,5,6,11 and 16 have been considered but are moot in view of the new ground(s) of rejection. The applicant argues that Baum does not disclose a partially fluorinated thermoplastic polymer. Baum generically discloses bonding fluorocarbons to glass and newly cited Strassel et al. [US5112692] discloses specifically bonding PVDF to glass. The applicant's specification (page 5, line 32 through page 6, line 15) recite PVDF as an example of a partially fluorinated polymer that is melt processible. Therefore Baum in view of the teachings of Strassel teach the method as recited in claims 1,3,5,6,11 and 16, because Strassel satisfies the limitations the applicant identified Baum as lacking.

Applicant's arguments filed 4/30/2007 have been fully considered but they are not persuasive. The applicant argues there is no motivation combine the references and that neither Grootaert nor Fukushi suggest the specific combination recited in the amended claims. Grootaert discloses using known methods of bonding. Fukushi teaches a method of bonding a fluoroelastomer composition to a substrate using a silane coupling agent, where the method comprises applying heat (column 5, lines 17-20). The motivation for combining the references is to show a way for forming a bond using elevated temperature. The applicant argues neither Grootaert nor Fukushi suggest the specific combination recited in the claims. It is not clear to the examiner what the combination of Grootaert and Fukushi lacks. In future arguments the applicant is advised to specifically address the limitations of the claims the references do not

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satisfy. As to a partially fluorinated thermoplastic polymer, Grootaert discloses the terpolymer of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride (column 3, lines 22-32). The applicant's specification list this terpolymer as a partially fluorinated polymer that is melt processible. Grootaert discloses the use of an amino-substituted organosilane. Fukushi teaches the method of applying heat to form a bond. Therefore the combined teachings of Grootaert and Fukushi appear to satisfy the requirements of the claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel McNally whose telephone number is (571) 272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

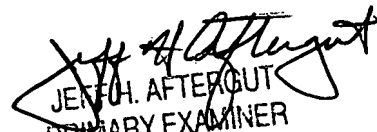
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel McNally
Examiner
Art Unit 1733

/DPM/
June 11, 2007



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300